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The Extrinsic in the Architectural Thinking of Leon Battista Alberti:
a reading of Sant'Andrea in Mantua

Fundamental to Alberti's theory of architecture is the dualistic nature of its subject: 'a building ... consists of *lineamenta* and *materia*.'¹ Here, he conjures up the two places where the building comes into existence. One is the building site, where the material object is assembled. The other is the drawing board where the design is generated as-it-were by a geometer. It might seem like a Platonic state of things: ideally, form dictates to matter; the builder is the instrument of the architect. But Alberti's theory is not so glib: the point to take is that both *lineamenta* and *materia* are always present in the building. As will be seen, consequences follow from the acknowledgement of the necessity and parity of matter.

Vitruvius began his treatise thinking about the architect rather than the building. But he too pointed to a fundamental dualism. It parallels that between form (or lineaments) and matter, and is between theory and practice: 'This knowledge [of the architect] is the child of practice and of theory.'² By providing knowledge with parentage, Vitruvius insists upon the presence of both, not the priority of either. The practical architect addresses the material realities of the building site and, in a process rather like biofeedback, reports to his *doppelganger*, the theoretically-prepared architect.³ Architecture by definition confesses building.

Alberti adopted Vitruvius's principles of building: *firmitas*, *utilitas* and *venustas*.⁴ These belong to the building *qua* practice and embrace the architect's purposes *qua* matter. Vitruvius's principles of design *qua* theory were *ordinatio*, *dispositio*, *eurythmia*, *symmetria*, *decor* and *distributio*.⁵ Perhaps these were too numerous and inexplicit for Alberti. At any rate, and more neatly, he substituted his own three principles announcing the specifically mathematical character of design indicated by the term *lineamenta*. Mathematical science defined things with reference to the quantity, quality and place of their parts, and Alberti set in counterpoint to the three principles of building his three terms; *numerus*, *finitio* and *collocatio*.⁶ Properly

¹ Leon Battista Alberti, *L'Architettura [De re aedificatoria]*, testo latino e traduzione a cura di Giovanni Orlandi, Introduzione e note di Paolo Portoghesi (Edizioni il Polifilo: Milano, 1966), prologue, 15: 'Nam aedificium quidem corpus quoddam esse animadvertimus, quod lineamentis veluti alia corpora constaret et materia...' [Orlandi]

² Vitruvius, *On Architecture*, Trans., Richard Schofield, Introd., Robert Tavernor (Penguin Classics, 2009), Book 1, Chapter 1, §1, 4 gives the passage as, 'This expertise derives from practice and theory.' The translation stays close to *Vitruvius on Architecture*, edited and translated by Frank Granger (Cambridge Mass: Harvard University Press and London: William Heinemann, Loeb, 1983), 6 ('His personal service consists of craftsmanship and technology'). Morris Hicky Morgan (*Vitruvius: The Ten Books of Architecture* (New York: Dover Publications, 1960), 5) has caught the metaphor in the Latin: 'Opera ea nascitur et fabrica et ratiocinatione' (Loeb, 5) and provides the translation in this instance.

³ Schofield and Tavernor, I,1,§3, 5

⁴ Schofield and Tavernor, I,3 §2, 19

⁵ Schofield and Tavernor, I,2,§1, 13

⁶ Orlandi, Bk. IX, Ch. 5, 817

calculated, the design would have its intrinsic beauty, its *concinntas*. The metaphor is musical –another mathematical art– with all the constituent parts (the notes) sounding well together and discordances immediately obvious.

Materia and *lineamenta* were intrinsic to the building. Under the one heading, the architect was concerned with the stability of the structure, with the serviceableness of the complex and with what was beyond the necessity of the one or the advantage of the other, namely the celebratory uselessness of its fineness of execution. Under the other, symmetry, proportion and disposition of elements were calculated.

But a third consideration also preoccupied Alberti. Indeed, Vitruvius had thought about it too. Alberti, however, was more systematic. Of Vitruvius's six principles of design, two were not strictly intrinsic to the building. Writing of *decor* and *distributio* (oikonomia), Vitruvius notes that architecture, in order to have merit, also needs to pay attention to extraneous factors. The building will have *decor* when, for example, it looks to the healthfulness of its region or when it adapts to daily or seasonal change.⁷ By *distributio*, Vitruvius refers to the social circumstances requiring expression, in town or country, of the private and the public, of the eminent and the humble.⁸ Grouped together with the other terms, his category became imprecise. Alberti, for his part, saw with particular clarity that the building occupied a place. Environment, circumstance and society were a third set of factors constituting architecture.

It is in light of consideration of those extrinsic factors that Alberti's famous letter of recommendation of his design for Sant' Andrea in Mantua is read here.⁹ A language describing the building in material terms extends to its social and moral gestures. The text gives indication of a richer conception of architecture than the material and formal: it acquires an extra eloquence and, perhaps, for Lodovico Gonzaga its recipient, a greater persuasiveness.

The physical, social, political and moral environment was of central concern to Alberti. Thus, it is crucial to his architectural theory. At the same time, because consideration of architecture involved its external circumstances, architecture is frequently able to figure throughout his extensive writings on other topics as the mis-en-scène of manifold human existence. At every turn, it seems, Alberti directs the reader to see the connections of facts and external circumstances and – it must result – the connections of all and all. For this reason it is very difficult to trace unbroken threads of thought across the extent of Alberti's literary, theoretical and

⁷ Schofield and Tavernor, I,2,§7, 18

⁸ Schofield and Tavernor, I,2,§19, 19

⁹ Eugene Johnson, *S. Andrea in Mantua: The Building History* (Pennsylvania State University Press: University Park and London), 1975, Plate 12: 'Ceterum, io intesi a questi di che la S.V. et questi vostri cittadini ragionavano de edificare qui a Sancto Andrea. Et che la intentione principale era per havere gram spatio doue molto populo capesse a vedere el sangue de Cristo. Vidi quel modello del Manetti. Piaquemi. Ma non mi par apto alla intentione vostra. Pensai et congettai questo qual io ve mando. Questo sarà più capace, più eterno, più degno, più lieto. Costerà molto meno. Questa forma de tempio se nomina apud veteres Etruscum sacrum.'

artistic work. To do so involves a multiplication of doors ‘never opened.’ Or, to put it another way, the threading of a bead can be impellingly logical, but it has its place by no unique entitlement, for others could be strung for just as good reason.

Alberti latches on to what most connects with environmental and social existence in Vitruvius’s famous triplet of terms for practical architecture –*utilitas*. It is the concept that has the crucial role in characterizing for him the greatest architecture that the world has seen. He presents a history of architecture in Book VI, Chapter 3 of *De re aedificatoria*, writing, ‘The art of building, so far as we can ascertain from the monuments of the ancients, had so-to-speak its first adolescent blossoming in Asia; thereafter it flourished in Greece and at last achieved its most splendid maturity in Italy.’¹⁰ His metaphor is agricultural, horticultural or arboricultural, overlaying the simpler one of youth, adulthood and maturity; and the notion of development that both contain is linear. At length, it is Roman architecture that is preeminent.

However, within Alberti’s history is another structure. He amplifies: the Asian kings built palaces; scale and splendour were most important. On the other hand, the Greeks built temples. They were critical of the Assyrians and Egyptians, realizing that ‘the artist’s skill attracted more praise than the wealth of the king.’¹¹ Measurement and calculation were prized. The narrative could seem to be progressive at this point; but Alberti has for the Romans not just a development from out of Greek example. Rather, he presents Roman architecture as a synthesis of Asian and Greek purposes and a corrective of the excesses of each (aided by an indigenous wisdom brought by the Etruscans). The Asian architecture was materialistic –reaching its apogee or its nadir in the pyramids of Egypt– and the Greek was rational –to the extent that it was uninterested in utility. The Romans, however, came to the great realization that ‘...grace of form could never be separated or divorced from suitability for use.’¹² That is, *utilitas*, under the heading of *materia*, is connected with *pulchritudo*, the quality of beauty distinct from material ornament (*venustas*) and belonging to form (*lineamenta*).¹³

A certain narrative of progress does continue here, for the Romans had advanced in the study of Nature beyond the Greeks in making this observation. However, they

¹⁰ Orlandi, 451: ‘Aedificatoria, quantum ex veterum monumentis percipimus, primam adolescentiae, ut sic loquar, luxuriam profudit in Asia; mox apud Graecos floruit; postremo probatissimam adepta est maturitatem in Italia.’ Neil Leitch (Leon Battista Alberti, *On the Art of Building in Ten Books*, translated by Joseph Rykwert, Neil Leach and Robert Tavernor (Cambridge, Mass./London, M.I.T. Press, 1988) [Rykwert et al] leaves out the first metaphor by translating ‘adolescentiae ... luxuriam’ as ‘gush of youth.’(157) I therefore offer my own translation.

¹¹ Rykwert et al, Ibid.; Orlandi, 451ff: ‘...laudari magis artificium manus quam opes reges...’

¹² Rykwert et al, 158. See italicized passage, note 13 below.

¹³ Alberti’s thinking and theory have been much discussed. Matter and form, practice and theory, ornament and beauty are treated uncontroversially here. Deeper discussion of the historical and philosophical bases of Alberti’s thinking and extensive reference to secondary literature are to be found in Pierluigi Panza, *Leon Battista Alberti: Filosofia e teoria dell’ arte*, Edizioni Angelo Duerini, Milano, 1994.

also surpassed the Asians in wealth, which they put to better use. The idea that the beauty of an object is involved with its function is also presented in Alberti's preface to Book II of the *Intercenales*, addressed to Leonardo Bruni. He tells of three pipes that the god Pan has for sale. One is exquisitely crafted and of the finest material, and makes no sound. Another is well crafted, made of a fine material, and makes an unpleasant sound. The third is a mere swamp reed, crudely fashioned, and makes a beautiful sound. It is the last on which Pan sets the highest price.¹⁴ A pipe's beauty (or *virtù*) consists in what a pipe is for –music making.

To amplify the point in Book VI, Chapter 3 of *De re aedificatoria*, Alberti had written, 'Take the case of a horse: they [the Romans] realized that where the shape of each member looked suitable for a particular use, so the whole animal itself would work well in that use. *Thus they found that grace of form could never be separated or divorced from suitability for use.*'¹⁵ With the idea of suitability and use, Alberti bridges the categoric divide between *materia* and *lineamenta* –necessary, if the building is to consist of both and is to be the product of theory and practice. And, to fill in the lacuna in the first quote above: 'the building is a form of body, which like any other, consists of lineaments and matter...' ¹⁶ The extrinsic –the social– corollary of fitness-for-purpose is decorum.

The only place where this bridging can happen is where design and matter share a place; that is, in Nature. Alberti expresses the point in most general terms in Book IX, Chapter 5 of *De re aedificatoria*: '...our ancestors ... declared that Nature, as the perfect generator of forms, should be their model.'¹⁷ That is, Nature is credited with creating both material bodies and their forms; and Plato is rejected. Alberti insists repeatedly on acknowledgement of Nature, or the environment –terrain, climate, the condition of the inhabitants, their numbers old and young, evidence of antiquity of settlement, etc.– and, because it is a scene of change, on the beauty or virtue of whatever adapts to its circumstances. So, Chapters 2 to 6 of Book I of *De re aedificatoria* consider the architect's task to select the best place in which to build. There are locations best avoided. And, as of places, so of persons. A hero of adaptability in Alberti's writings is Giannozzo Alberti, the principal interlocutor of Book III of *De familia*. Giannozzo explains that he acts not on principle possessing priority

¹⁴ Leon Battista Alberti, *Dinner Pieces*, a translation of the *Intercenales* by David Marsh (Binghampton, New York, 1987), 34

¹⁵ Orlandi, Bk. VI, Ch. 3, 455; 'Nam, puta in equo, sentiebat illa quidem, ad quos usus eius figuram membrorum comprobe, raro fieri, quin eos ipsos ad usus id animans commodissimum sit; et *gratiam formae proinde putabat ab expetita usus commoditate nusquam exclusam* aut seiunctam inveniri.' Rykwert et al, 158: 'Take the case of a horse: they realized that where the shape of each member looked suitable for a particular use, so the whole animal itself would work well in that use. Thus they found that grace of form could never be separated or divorced from suitability for use.'

¹⁶ Rykwert et al., 5; Orlandi, 15: 'Nam aedificium quidem corpus quoddam esse animadvertimus, quod lineamentis veluti alia corpora constaret et materia...'

¹⁷ Rykwert et al., 303; Orlandi, 817: '...maiores nostri ...naturam optimam formarum artificem sibi fore imitandam indixere.'

over circumstances but that his principle is to act as circumstances dictate or permit. What he loses in heroic obduracy he gains in common humanity.

There was a time when adaptation to circumstances was unnecessary. In the Golden Age and in the Garden of Eden, Nature was perfectly benign. Where adaptability is required, a stable state has evidently given way to a fallen or fluctuative one. Both tales are of our nomadic age when we were not numerous and nature was bountiful and it was no long trek to gather our means of survival. But now we are stationary and delve far from the temperate zones –now, where seasonal change is extreme. Adaptation is demanded of us if we will survive.

We need shelter from the elemental extremes. More than a theoretical requirement, Alberti experienced architecture in climatological terms. The merit of Florence Cathedral so much consisted in its temperateness, so much might it seem that his own architecture sought its realization in practice. In addition, building or architecture which provides that shelter is, at the same time a response to environment and climate, an action to which we attach moral value. As shelter is a material object and is also a sustaining gesture, architecture, its principal provider, lends itself, in Alberti's writings, to analogy and metaphor directed to moral description and analysis. Alberti offered a different account of the beginnings of architecture from Vitruvius. He pictured the family, as the molecule of society, subsisting in the natural environment. Vitruvius traced the beginnings of civil society to the moment when we discovered the advantage of cooperation in feeding the fire. Before then, a savage state prevailed. The getting and distributing of our means of subsistence was not of interest to Vitruvius but was of primary concern to Alberti.

In fact, by way of preface, he gave a précis of Vitruvius's general theory of *firmitas*, *utilitas* and *venustas* in Book IV, Chapter 1 of *De re aedificatoria*: 'If our surmise is correct, man first made himself a shelter to protect himself and his own from the assault of the weather. Men's appetite then grew beyond what was essential for their well-being, to include all that would contribute to their unbridled demand for every comfort. They became so interested in and excited by the opportunities presented, that they conceived and eventually realized buildings intended to cater for pleasure alone...' ¹⁸

Then, quitting Vitruvius's company, he expands the early part of the narrative to his own purposes in *De familia*:

Families increase in population no differently than do countries [towns], regions, and the whole world. As anyone who uses his imagination will quickly realise, the number of mortal men has

¹⁸ Rykwert et al., 92, 95; Orlandi, 265, 273: 'Nam principio quidem, si recte interpretamur, facere opus homines coepere. Quo se suaque ab adversis tempestatibus tuerentur. Proxime item persecuti sunt non modo velle quae ad salutem essent necessaria, verum et si qua ad expeditas quasque commoditates assequendas conferrent, ea nusquam esse praetermissa voluere. Inde adeo rerum opportunitate admoniti atque illecti eo devenere, ut etiam quae ad voluptates explendas facerent, excogitarint in diesque usurparint...'

grown from a small number to the present almost infinite multitude through the procreation and rearing of children. And, for the procreation of children, no one can deny than man requires woman. Since a child comes into the world as a tender and delicate creature, he needs someone to whose care and devotion he comes as a cherished trust. This person must nourish him with diligence and love and must defend him from harm. Too much cold or too much sun, rain, and the wild blowing of a storm are harmful to children. Woman, therefore, did first find a roof under which to nourish and protect herself and her offspring. There she remained, busy in the shadow, nourishing and caring for her children. And since woman was busy guarding and taking care of the heir, she was not in a position to go out and find what she and her children required for the maintenance of their life. Man, however, was by nature more energetic and industrious, and he went out to find things and bring what seemed to him necessary. Sometimes the man remained away from home and did not return as soon as his family expected. Because of this, when he came back laden, the woman learned to save things up in order to make sure that if in the future her husband stayed away for a time, neither she nor her children would suffer.¹⁹

Alberti's aboriginal building consists, then, in two parts, the roof and the store, and in these is anthropomorphised in the image of the protective and sustaining mother.

¹⁹ Renée Neu Watkins, *The Family in Renaissance Florence* (Columbia, South Carolina: University of South Carolina Press, 1969), 111; Leon Battista Alberti, *I libri della famiglia*, a cura di Ruggiero Romano e Alberto Tenenti, Nuova edizione a cura di Francesco Romano, Tenenti, Furlan, (Torino: Einaudi), 1994, 128-29 [Romano, Tenenti, Furlan]: 'Diventa la famiglia popolosa non altro modo che si diventassono popolose le terre, province e tutto el mondo, come ciascuno da sé stessi può immaginando conoscere che la moltitudine de' mortali da pochi a questo quasi infinito numero crebbe procreando e allevando figlioli. E al procreare figlioli niuno dubiti all' uomo fa la donna necessaria. Poiché 'l figliolo venne in luce tenero e debole, a lui era necessario avere a cui governo e fede e' fusse caro e commendato, avere chi con diligenza e amore lo nutrisse e dalle cose nocive lo difendesse. Era l'orpo nocivo el troppo freddo, el troppo sole, la molta piovra, e i furiosi impeti de' venti; però in prima trovarono il tetto sotto el quale nutrissino e difendessino sé stessi e il nato, Qui adunque la donna sotto l'ombra rimaneva infaccendata a nutrire e a mantenere il figliolo. E perché essa occupata a custodire e governare lo erede, era non bene atta a cercare quello bisognava circa il suo proprio vivere e circa mantenere i suoi, però l'uomo di natura più faticoso e indistioso usciva a trovare e portare secondo che a lui pareva necessario. Così alcuna volta si soprastava l'uomo, non tornando presto quanto era da suoi aspettato. Per questo quando egli aveva portato, la donna tutto serbava, acciò che ne' seguenti giorni, soprastando il marito, né a se né a' suoi cosa mancasse.' Alberti's passage reads like a gloss on Cicero, *De Officiis*, IV, 11. Earlier, Lionardo had referred to marriage. 'la societa costituita de essa primava natura...' (43) Other than in this instance and note 26, passages in English from *De familia* are my translations.

She lives on, performing the same tasks, in the villa. In other buildings, duly analysed, she continues to be found, quietly performing the same services.

If we follow Alberti's practice of reading architecture as moral analogy, we can also read in reverse. For example, the relation of mother and child bears a certain resemblance to that of nurse and child as encountered in Book VIII, Chapter 6 of *De re aedificatoria*. Alberti writes, 'Plato recommended that at every crossroads there be a space where nurses and children could meet occasionally. I believe that the purpose behind this was not only to strengthen the children in the fresh air, but also to encourage the nurses to be neat by exposing them to the eyes of so many curious observers, and to make them less sloppy, since they are eager for praise.'²⁰ The villa, standing, '...where it could enjoy the benefit and delight of breeze, sun, and view...' ²¹ acquires in its healthfulness and openness a certain kinship with the small piazza at the crossroads in town.

The first function of the building being protection, its indispensable and most important part is its roof. If its first anthropomorphization, close to the state of nature, is the mother, in the more developed circumstances of the town, it is the *paterfamilias*. Giannozzo Alberti, in Book III of *De familia*, lists the properties that, as a *paterfamilias*, he will own. In the country, he will have a villa. In town, he will have a business with its premises, and there too he will have the family house. Of the last he says, 'I should wish all my family to lodge under one roof, to warm themselves at a single hearth and to sit at the same table.'²² Roof, hearth and table are the practical provisions of the house of Giannozzo and the moral elements of the household over which he presides. The moral character of the roof is also evidenced for Alberti in an ancient passage. He recalls it in his dialogue, *Theogenius*: 'Plutarch writes that sixteen men of the most noble family of the Fabii lived together under one roof. Poverty was able to do this among so many: maintain unbroken concord and constant love.'²³

The roof under which many gather and whose sheltering function is most explicitly connected with morality is that of the church. Alberti presents it in its most elemental form at the beginning of Chapter 4 of Book VII: 'All temples consist of a portico and ... a cella.'²⁴ Of course, the passage of religious history has seen elaborations and variations upon the first configuration –the Roman or Greek temple– but, as with the

²⁰ Rykwert et al, 263; Orlandi, 713: 'Iubebat Plato ad trivium haberent spatia, ubi nutrices cum pueris interdum convenirent essentque una. Credo id quidem, quo et pueri validiores redderentur usu aurae libioris, et nutrices laudis studio essent lautiores et minus, inter tot eius ipsius rei observatrices, errarent negligentia.'

²¹ Rykwert et al, 145; Orlandi, 415: '...unde omnis aurae solis aspectusque commoditas et voluptas liberrime capiatur.'

²² Romano, Talenti, Furlan, III, 234, lines 1235-1237: 'Vorrei tutti I miei albergassero sotto uno medesimo tetto, a uno medesimo fuoco si scaldassono, a una medesima mensa sedessono'.

²³ Leon Battista Alberti, *Theogenius*, in *Opere volgari*, a cura di C. Grayson, Vol. II (Bari: Laterza, 1966), 71: 'Scrivo Plutarco che uomini sedici della famiglia nobilissima de' Fabii insieme sotto un tetto abitavano. Questo potea la povertà fra tanti uomini: mantenere intera concordia e fermo amore.'

²⁴ Rykwert et al, 196; Orlandi, 549: 'Templi partes sunt porticus et cella...'

functions of shelter and storage in the first building, and probably deriving from them, the church remains reducible to those core structures and functions.

At its first appearance, the portico was a roof. Later, it could be found walled in to a greater or lesser extent. Alberti continued to use the term, portico, of the aisle in the basilica. [VII, 14] Roof and portico are often interchangeable terms. Of course, the first roof under which Christians gathered belonged not to the church but to the domestic house. Alberti conjures up a scene of early Christian piety reborn in Giannozzo's house. In Book VII, Chapter 13 of *De re aedificatoria*, he described that first, pure practice, contrasting it with decadent, modern behaviour.

In ancient times, in the primitive days of our religion, it was the custom for good men to come together for the common meal. [...] to become humbler through their communication, and to fill their minds with sound instruction, so that they would return home all the more intent upon virtue. [...] Everyone would burn with concern for the common salvation and with love of virtue. [...] Later, when princes allowed these meetings to become public, there was little deviation from the original custom [...] There would be a single altar, where they would meet to celebrate no more than one sacrifice each day. There followed the practice of our own times, which I only wish some man of gravity would think fit to reform. I say this with all due respect to our bishops, who, to preserve their dignity, allow the people to see them scarcely once in the year of festivals, yet so stuff everything with altars, and even ... I shall say no more. Let me simply state that within the mortal world there is nothing to be found, or even imagined, that is more noble or holy than the sacrifice. I would not consider anyone who wanted to devalue such great things, by making them too readily available, a person of good sense.²⁵

Villa, house and church are kindred buildings when their moral functions are considered. Domestic life under roof, before hearth and around table (supplied from the farm) is an enactment, in Alberti's thinking, of the first Common Life. The place of

²⁵ Rykwert et al, Bk. VII, Ch. 13, 229; Orlandi, 627-629: 'Apud maiores nostros per illa nostrae religionis initia optimi viri in communionem coenae conveniebant, [...] ut convictu mutuo mansuescerent et animo bonis monitis referti domum redirent multo cupidissimi virtutis. Illic igitur, libatis potius quam assumptis quae in coenam essent per summam frugalitatem apposita, habebatur et lectio et sermo de rebus divinis. Flagrabant omnium studia ad communem omnium salutem et ad cultum virtutis. [...] Omnia istoc pacto inter eos veluti inter amantissimos fratres erant communia. Post id tempus, cum per principes licuit publice facere, non multo quidem a vetere patrum instituto deviarunt [...] Itaque unica tum quidem erat ara, ad quam conveniebant, unicum in dies sacrificium celebraturi. Successere haec tempora, quae utinam vir quispiam gravis, pace pontificum, reprehendenda duceret: qui cum ipsi dignitatis tuendae gratia vix kalendis annuis potestatem populo faciunt visendi sui, omnia usque adeo circumferta eddidere altaribus et interdum... non dico plus. Hoc affermo: apud mortales nihil inveniri, ne excogitari quidem posse, quod sit dignius, sanctius sacrificio. Ego vero neminem dari bene consultum puto, qui quidem velit res dignissimas nimium perprompta facilitate vilesce.''

the dining table in the life of the good family is clear to see from a passage in Alberti's dialogue, *De iciarchia*:

This preparation and heaping of the table embodies veneration and we can almost say that the table is like an altar dedicated to humanity, and that the banquet is in part a sort of mass and religious coming-together and joining together in firmest charity. And for this reason I should say that where the young and the old dine there should be someone to occupy the place of the priest, as well as for the final enrichment of the banquet.²⁶

From being the acts of sheltering and sustaining, the house becomes the scene of conviviality. The church that will keep alive the memory of it will be emphatically congregational in its conduct. At several points in his writings, Alberti reveals his ambition for the church building (and perhaps by implication his despair of the institution whose leaders were so elusive and whose primary observance was so devalued). In this convivial spirit, it would represent *amicizia*.

A particularly telling passage appears in *De familia*, Book IV. Moreover, it may be an interpolation. In a long speech, Adovardo Alberti anatomises *amicizia*, explaining that its parts are three: good will, frequency of encounter and equality of virtue.²⁷ In order to help explain his meaning, he resorts to a simile, likening *amicizia*'s parts to those of a temple:

We would not call a temple or basilica perfect if its structure lacked a roof to cover those who enter and to protect them from sun and rain, or if it lacked a porch which served partly to keep out the wind, partly to keep the place separate from other public and profane places. Indeed, perhaps even if it lacked proper ornamentation, it would not be a perfect or finished edifice. Likewise friendship can never be called perfect and complete if it lacks something. It is not true friendship if the friends do not mutually feel good faith and firm and simple affection of the soul, entirely excluding and preventing any suspicion and hate that could in any way trouble their sweet concord and union. I would not call it perfect friendship either if it were not full of the delight of good character and habits.²⁸

²⁶L.B. Alberti, *De iciarchia*, in *Opere Volgari*, Vol.II, 1968, 57-58: 'Questo apparecchio e lautizie della mensa ha in sé venerazione, e quasi possiamo dire che la mensa sia come ara sacra alla umanità, e che'l convito sia in parte spezie di sacrificio e religiosa comunione e confederarsi con fermissima carità. E per questo dire' io che ne' conviti de' giovani e' vecchi vi bisognassero in luogo di sacerdote, come per altro sì *etiam* per ornamento del convito.' *De iciarchia*, generally believed to have been written towards the end of Alberti's life, restates much of the meat of *De familia*.

²⁷ Romano, Tenenti, Furlan, IV, 377, lines c.1470-c.1610

²⁸ Watkins, 1969, 283-84; Romano, Tenenti, Furlan, 377-8: 'Ma come non si dirà tempio né basilica perfetta quella struttura a quale tetto, che cuopra chi entro al sacrificio fusse dal sole e dalle piove, e sponde mancasse, quali parte difendano da' venti, parte la tengano segretata dagli altri siti pubblici e profani, e forse ancora

The church consists materially of roof, walls and those fixtures that are appropriate to its religious function. But Alberti's purpose in the passage being to identify the parts of *amicizia*, the church and its parts are to provide metaphorical corollaries. The roof, whose practical function is to act as parasol and umbrella, performs the moral function of gathering the community under its protection. Its action is benevolent. The walls keep out the wind, and metaphorically exclude causes of contention and disaffection that would discompose the community. Virtue is maintained within the walls. Those fixtures that belong to the functioning church would include, centrally, the altar and the mass conducted daily there: these correspond with the necessary and repeated acts of courtesy by which the cohesive and harmonious community maintains the living spirit that is necessary to *amicizia*.

Book IV of *De familia* was written later than the first three books composed in the mid-1430s. It is very probably to be associated with the *Certame Coronario* of 1441, the poetry contest of which Alberti was an organizer. The event took place on 22nd October in Florence Cathedral that exemplary building for Alberti on several counts. The theme of the poems, in the vernacular, was to be *amicizia*. If Book IV is indeed to be associated with the gathering, the part of the interpolated passage discussed above would have had, in the form of the fabric of the Cathedral, the exemplification of true *amicizia*. This was the roof, these the walls, these the ornaments. It was both the setting for meditation upon *amicizia* and its metaphoric embodiment. The moral vivification of the fabric housing the witnesses to the occasion and audience of the speech would have been a transfixing experience.

Alberti's own poem acquires drama and moral vigour from the space that it must be thought to be acknowledging.

Dite, o mortali, che sì fulgente corona
 poneste in mezo, che pur mirando volete?
 Forse l'amicitia, qual col celeste Tonante
 tra li celicoli è con maiestate locata,
 ma pur sollicita non raro scende l'olimpo
 sol se subsidio darci, se comodo possa,
 non vien nota mai, non vien composta temendo
 l'invidi contra lei scelerata gente nimica.
 In tempo et luogo veggo che grato sarebbe
 a chi qui mira manifesto poterla vedere,
 s'oggi scendesse qui dentro accolta vedreste
 sì la sua effigie et gesti, sì tutta la forma.

manchandoli e' dovuti a sé ornamenti sarebbe edificio non perfetta né assoluto, così la amicizia mai si dirà perfetta e compiuta, a quale manchi delle sue parte alcuna. Né sarà vera amicizia se fra gli amici non sarà una comune fede e ferma e semplice affezione d'animo sì fatta, ch'ella escluda e fuori tenga ogni suspizione e odio, quale da parte alcuna potesse disturbare la dolce fra loro pace e unione. Né io reputerò perfetta amicizia quella quale non sia piena d'ornamenti di virtù e costume; a qual certo cose chi dubita la sola per sé benivolenza non valervi, se non quando sia e conosciuta e ricambiate?'

Dunque voi che qui venerate su' alma corona
 leggete i miei monumenti et presto saravvi
 l'inclita forma sua molto notissima, donde
 cauti amerete. Così sarete beati.²⁹

'Tell us, O mortals, with this shining crown set in our midst, what for its admirableness do you wish to possess? Perhaps Friendship, placed in majesty with the heavenly thunderer among his angels, though frequently invoked, comes down from Olympus only if She has succour to bring us, if She can do so obligingly; [but] never makes herself known, never reveals herself fully, while in fear of the envy against her of wicked and hostile humankind. In time and space I see how welcome it would be to this admiring assembly to be able to see her, if today she should descend right here, received among us, both her image and her actions, indeed her complete form. So, you who venerate her spiritual crown, read my injunctions and soon her glorious form will be fully before you, wherefore you will love [?] in all proper measure. In this way you will be blessed.'

It is possible to picture Alberti reciting his poem and, with some confidence, to place him within the building. Looking up to the source of light in the oculus, he made a gesture of embrace of the assembly and he pointed to the earthly correspondence of the light; the golden crown, and of the dome –the annular form– that was the prize. The *Certame Coronario* surely took place under the dome of the Cathedral itself. Alberti invites the audience to be aware of its embrace and the community of feeling that it generates among them. The circumstances are propitious for that feeling to be warmed to *amicizia* through an illumination from on high.

Under a roof there is congregation: under a dome is perhaps a more self-aware community; one experiencing consensus. Alberti considered community as, in addition to a feeling, a thought when he wrote about it in Book III of *De familia*. Giannozzo, having pictured the family under one roof, before a single hearth and around the common table, contemplates the possibility of its increase and its outgrowing of the home: 'Yes, my dear Lionardo, families gather themselves together under a single roof, and if, the family having increased, a single hall cannot accommodate them, let them at least rest all under the shadow of a single will.'³⁰ The metaphor of the shadow now has a centre or axis, for all acquiesce in the single will or –better– participate in it. The tendency is to conceive the roof in the form of a cupola.

The congregation is conscious of a single binding commonality –its possession of the Tuscan land– in an evocative passage in the prologue to *Della pittura* of 1436. Brunelleschi's great achievement in creating the cupola of Florence Cathedral is made the focus of this thought. The dome scribes a circuit at the centre of which is

²⁹ Girolamo (Hieronymo) Mancini, *Opera inedita et pauca separatim impressa*, (Florentiae: Sansoni, 1890), 236-37; see also L.B. Alberti, *Opere Volgari*, Vol.II, 45. The differences are very minor. Grayson concludes 'poi così starete beati.'

³⁰ Romano, Tenenti, Furlan, III, 236: 'Sì, Lionardo mio, sotto uno tetto si riducano le famiglie, e se, cresciuta la famiglia, una stanza non può riceverle, assettinsi almeno sotto una ombra tutti d'uno volere.'

an axis and at the apex of which is the triumphant and compassionate Madonna, sheltering the people beneath her mantle and performing her act of *misericordia*. The people are of one virtuous mind:

Who could ever be so unfeeling or so ungenerous that he would not praise Pippo the architect [Filippo Brunelleschi], seeing here such a great structure, raised above the skies, wide enough to cover with its shadow the whole Tuscan people...?³¹

The dome enjoins, irresistibly, feelings of gratitude and common identity. Only a solitary –hateful of society like a wild beast– could walk away. Alberti's praise of a work of engineering is simultaneously a hymning of its architect for his political, social, and religious benefaction. Being capable of housing the whole people, it is morally also Tuscany's basilica.

Alberti is particularly attentive to the thought that architecture inhabits an environment and adapts to it. At the same time, it constitutes an environment, physically and morally preserving its occupant. As a metaphorical inhabitation it is able to expand and elaborate itself. Florence Cathedral is just such a material and metaphorical place for Agnolo Pandolfini in Alberti's dialogue, *Profugiorum ab aerumna* (late 1430s-early 40s). Within the cathedral, Agnolo surveys the scene and gives an account of his sensations. It engages all his senses.

And certainly this temple has in itself grace and majesty; and, as I have often thought, I delight to see joined together here a charming slenderness with a robust and full solidity so that, on the one hand, each of its parts seems designed for pleasure, while, on the other, one understands that it has all been built for perpetuity. I would add that here is the constant home of temperateness, as of springtime: outside, wind, ice and frost; here inside one is protected from the wind, here mild air and quiet. Outside, the heat of summer and autumn; inside, coolness. And if, as they say, delight is felt when our senses perceive what, and how much, they require by nature, who could hesitate to call the temple the nest of delights? Here, wherever you look, you see the expression of happiness and gaiety; here it is always fragrant; and, that which I prize above all, here you listen to the voices during mass, during that which the ancients called the mysteries, with their marvelous beauty.³²

³¹ Leon Battista Alberti, *Opere Volgari*, Vol.III, a cura di Cecil Grayson (Bari: Laterza, 1973), 7-8: Chi mai sì duro o sì invidio non lodasse Pippo architetto vedendo qui struttura sì grande, erta sopra e' cieli, ampla da coprire con sua ombra tutti e' populi toscani...

³² Christine Smith, *Architecture in the Culture of Early Humanism: ethics, aesthetics and eloquence 1400-1470* (New York and Oxford: O.U.F., 1992), 5-6; Leon Battista Alberti, *Opere Volgari*, Vol. II, 107: 'E certo questo tempio ha in sè grazia e maestà: e quello ch'io spesso considerai, mi diletta ch'io veggo in questo tempio iunto insieme una gracilità vezzosa con una sodezza robusta e piena, tale che da una parte ogni suo membro pare posto ad amenità, e dall'altra parte comprendo che ogni cosa qui

It is springtime in Florence Cathedral. But Agnolo is not upon some idle rhetorical ramble; the poet seeking a lofty seclusion above a disdained reality. The Cathedral does what it is the job of architecture to do, to mitigate the extremes of weather without. Spring comes between autumn and winter. In the prologue to *De re aedificatoria*, Alberti wrote, 'We are indebted to the architect ...for providing that safe and welcome refuge from the heat of the sun and the frosts in winter...' –the first of his tasks.³³ It does what the mother did, for 'Too much cold or too much sun, rain, and the wild blowing of a storm are harmful to them [children].'³⁴ Roof and walls –and thermal mass– have done their work, and something of Eden has been retrieved.

Yet the material structure seems to be of a contradictory character in Agnolo Pandolfini's speech.³⁵ He found '...joined together here a charming slenderness with a robust and full solidity.' Are these qualities not thoroughly incompatible? It might seem that the protective and sheltering role of the building demands its massiveness and that the feminine and spring-like metaphor requires that the church be described as graceful: that there is a disingenuousness engendered by literary conceit in the passage. However, Alberti's moral seriousness has been sufficiently demonstrated by now. Precisely the connectedness of the material and the formal in architecture has been his concern, as has been the connection of the material object and the moral condition. Dualism rather than contradiction is what he has in mind.

Agnolo's speech above can help illuminate that other building of great importance to Alberti. Alberti was not, of course the architect of Florence Cathedral; but the building focussed much of his thinking about architecture as a material and social or moral art. Sant' Andrea, his last commission, in Mantua, aimed to be a *summa* of that thinking. He wrote, to Lodovico Gonzaga, Marquis of Mantua, a letter (without date but probably of 1470):

On another point, I have learned recently that Your Lordship together with your citizens have been thinking about building here at Sant' Andrea and that the principal intention was to have a large space where a large number of people could gather to see the Blood of

è fatta e offirmata a perpetuità. Aggiugni che qui abita continuo la temperie, si può dire, della primavera; fuori vento, gelo, brina; qui entro socchiuso da'venti, qui tiepido aere e quiéto: fuori vampe estive e autunnali; qui entro temperatissimo refrigerio. E s'egli'è, come è dicono che le delizie sono quando a'nostri sensi aggiungono le cose quanto e quali le richiede la natura, chi dubiterà appellare questo tempio nido delle delizie? Qui dovunque tu miri, vedi ogni parte esposte a giocondità e letizia; qui sempre odoratissimo; e, quel ch'io sopra tutto stimo, qui senti in queste voci al sacrificio, e in questi quali gli antichi chiamano misteri, una soavità maravigliosa.'

³³ Rykwert et al, 3; Orlandi, 9: 'Sed [ne] architecto ea re [solum] debemus, quod tuta optataque diffugia contra solis ardores brumam pruinasque dederit...'

³⁴ See above note 19.

³⁵ Agnolo Pandolfini (1360-1446) was buried in San Martino Gangalandi, Lastra a Signa. Alberti took possession of the benefice in 1432. To Agnolo was attributed book III of *De Familia* when at last it was published in printed form in 1734 –an error not corrected until the edition of 1843.

Christ. I saw that design of Manetti's. I like it. But it does not seem to me to fit your purpose [*apto*]. I have pondered and put together this one, which I send to you. This will be more capacious [*capace*], more durable [*eterno*], more worthy [*degno*] and brighter [*lieto*]. It will cost much less. This kind of temple is called by the ancients an Etruscan Shrine.³⁶

The terms that Alberti uses in recommendation of his own design carry the same sort of contradiction that is present in Agnolo's speech.

An analysis of the letter, for the structural, functional, aesthetic and associational building that it implies, arrives at a very coherent anatomisation of the church of Sant' Andrea pretty much as it stands. The meditative reader at length concludes that Antonio di Ciaccheri Manetti (d.1460), Brunelleschi's model-maker, capomaestro of the Cathedral works, associated with other works of Brunelleschi and with SS. Annunziata, critic of plans for San Francesco at Rimini and participant in the remodelling project at the Gonzaga palace at Revere on the river Po, has proposed a Brunelleschian sort of basilica. Alberti's view was that Lodovico's intention pointed towards an alternative. Everything that Alberti would promise, through his own design, was predicated on the omission of columns –the glory, it could be said, of S. Lorenzo and S. Spirito in Florence. Columns, especially expensive to quarry, transport and raise in the flat lands of the Po, would obstruct the view of the relic and deprive it of focal eminence, contribute to a general gloominess, and be part of a frail structure that could not risk large arched and vaulted spaces. Alberti's brick church, by contrast, would be *capace*, *eterno*, *degno* and *lieto*.

The terms do not quite match the material building with the categories adopted from Vitruvius; but *capace* can be set under *utilitas*, and *eterno* under *firmitas*. Under *venustas* might come both *degno* and *lieto*: but they seem antithetical, as were the graceful and massive qualities of Florence Cathedral.

However, the terms that Alberti has adopted for his own design and which can help in the picturing of the design of Manetti, can also be abstracted from their descriptive functions. They explain the building not only materially but also socially and morally – their meanings amplified and shifted a little in bias. The term *capace* belongs to the basilica as conceived in *De re aedificatoria*. [VII,14] This was a building that received the whole population of a Roman town, for all the population's civil and legal transactions took place there. It indicates the moral roof discussed above. *Eterno* has a religious significance. Repeatedly, Alberti alludes to the property of God that humankind can most nearly grasp. It is the eternal –not being subject to mortality or the abrasive effects of time. For example, in debating what materials are most appropriate for the representation of the gods, he says, '...any object of worship intended to represent a god should resemble that god as far as possible. For this reason I feel that they should be as lasting and immortal as mortal hands can make

³⁶ See above, note 9.

them.³⁷ The mass of the brick building will assure its longevity. In being *degno*, the church is able to do honour to the relic of the Blood of Christ. Since it is not a matter of capaciousness [*capace*] or massiveness [*eterno*], the building's dignity or worthiness must be a matter of beauty or ornament (in respectively *lineamenta* and *materia*). The congregational function of the church connects with its dignity and lends a moral character to it. *Lieto* is a matter of illumination. It was a property also of the ancient Roman basilica, for documentation used there needed to be legible [VII,14], and was therefore a matter of *utilitas*. However, in choosing the word, Alberti also intends to show that the building shapes the mood of its occupants. Lightness is also a thing of the heart.

It is a mood that would seem contrary to that indicated by *degno*. A solemnity is enjoined by the dignity of the building (as the quality that it has in itself as a result of its being worthy of the relic that it holds).

A contradiction seems to lie within the terms of Alberti's recommendation of his design. The echo of Agnolo Pandolfini's speech in Florence Cathedral is heard at this point. Arriving at the phrase *giocondità e letizia*, a coda seems to have been reached in his speech praising the spring-like sensations that the building evokes. But Agnolo continues, and adds something of an epilogue. After a smiling joyfulness, it is a solemn note with a beauty of sublimity that the listener is to hear at the end: 'and, that which I prize above all, here you listen to the voices during mass, during that which the ancients called the mysteries, with their marvelous beauty.'³⁸ The 'mysteries' at the mass are made clearer later on in Agnolo's speech when he indicates that it is the *versiculi greci* that he finds particularly affecting. These are, of course, the words of the *Kyrie*. So, the contrary moods of joy and gravity are felt in Florence Cathedral and, in his letter to Lodovico Gonzaga, Alberti promises something similar in Sant' Andrea.

The opposition of moods carries on from Agnolo's description of Florence Cathedral as built around two apparently contradictory qualities of structure. It had *iunto insieme una gracilità vezzosa con una sodezza robusta e piena*. Are these qualities not quite incompatible? Its robustness would seem to connect with *firmitas* and would make for the quality, *eterno*, in Sant' Andrea. Its graceful slimness is an opposite quality. Evidently, as well as structurally sound, the Cathedral was spacious. Perhaps its spaciousness made its internal supports seem without bulkiness. An airiness accompanied its spaciousness both logically and within the terms of the extended description of the spring-like place.

The Cathedral, like Sant' Andrea, then, was *lieto* and *capace* with *una gracilità vezzosa*. In its material stability, it was *degno* and *eterno* with *una sodezza robusta e piena*. Musically, both buildings would be *allegro* and *maestoso*. Alberti's four terms for Sant' Andrea are in fact two pairs of contraries –*capace/eterno* and *lieto/degno* or two pairs of allied terms –*capace/lieto* and *eterno/degno*– set in opposition. In this

³⁷ Rykwert et al, Bk. VII, Ch. 17, 243; Orlandi, 661: '...ut quas deorum loco adorandas ponimus, quam prope id assequi liceat, diis ipsis persimiles apponamus. Perennitate igitur, quoad per, mortales fieri possit, immortales habendas censeo.'

³⁸ See above note 32.

setting up of contrary values –this coincidence of opposites, so much recalling Nicholas of Cusa, or Winkelmann’s re-pairing of the terms, calm, simplicity, noble and grandeur– there is clearly the repetition of the form of thinking employed in the speech of Agnolo. *Capace* refers to the void and *eterno* to the solid of the building. In the material building, *lieto* is light and *degno* is dark. In the moral building, *lieto* is joyful and *degno* is solemn.

Architectural space and structure acquire psychological connotations. At Sant’ Andrea, the congregating is joyful. The display of the relic of the Blood of Christ is a solemn occasion. The one happens in the rectangular space of the nave and the other in the space of spectacle, the focus of ritual, the apse –respectively in the portico and cella, understood emblematically.³⁹ These are the functional poles of the church, as they are of Christian religious practice. Traced back to their Christian origins, they were the provisions of the Christian man’s house; his roof and his hearth. At the point of meeting in the house was the table; and correspondingly the point of balance between the nave and apse, in Sant’ Andrea, and of portico and cella in any church, was the altar and the eucharist served there.⁴⁰ The words of the mass quoting St Matthew (8:8), ‘Domine, non sum dignus ut intres sub tectum meum,’ connect eucharist and roof. The passage above that traces the history of Christianity from its early pure form to the contemporary dark age of proliferated altars and neglectful fathers of their flocks is the continuation of Alberti’s discussion of the altar in Book VII Chapter 13 of *De re aedificatoria*. Alberti always referred to the mass as the *sacrificio*.

The lesson to take away from the service at the altar, as at the common table, was that all could imitate Christ by performing what self-sacrifice *amicizia* demanded. The act is described many times throughout Alberti’s writings. Among those who perform it is Giannozzo Alberti: he says, ‘...it is my duty to help my people with my goods, my sweat, my blood, to do whatever I can -even give my life- for the honour of my family and of my nearest.’⁴¹

³⁹ The present domed and cruciform east end of the church was not intended by Alberti.

⁴⁰ Of course, the real building could be more complicated than the functional archetype. Massimo Bulgarelli proposes that the relic was intended to be kept in a chapel under the *ombrellone* of the westwork of the church, prior to display to the faithful from a balcony at the level of the main cornice, in the inner west wall of the church (“L’Avancorpo di Sant’ Andrea a Mantova”, in *Leon Battista Alberti: Humanist – Architekt – Kunsttheoretiker*, eds. Joachim Poeschke & Candida Syndikus, pp.279-297, Rhema-Verlag, Münster, 2008. See also, M. Bulgarelli, *Leon Battista Alberti 1404-72: Architettura e Storia*, Electa, Milano, 2008, pp117-134ff). Perhaps different occasions saw monstrosity at different places. The theatre that is conceived here for the east end, connecting table and sacrifice, contained the moment when the relic would be raised, visible to all, and the words would be spoken: “This my blood.”

⁴¹ Romano, Tenenti, Furlan, 314: ‘... a me sta debito aiutare e’ miei con la roba, col sudore, col sangue, con quello che io posso persino a porvi la vita in onore della casa e de’ miei.’

Architecture stood at the nexus of the material, the formal and the circumstantial. A measure of the depth of thinking of Alberti on the point is the economy of the letter that he wrote to Lodovico Gonzaga about Sant' Andrea. If he were asked to amplify upon its form as an Etruscan Shrine, he would have resorted to the sort of terms that he used in *De re aedificatoria* to describe it (VII,5). These were the geometer's *lineamenta*. He would have explained the significance of his terms for the material fabric and for the affective place. In the end, he could promise that the biggest vaulted room since Roman times would offer order, shade and shelter and something for all to see and affirm.

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Lucretius Book V

And when the woman, joined unto the man,
Withdrew with him into one dwelling place,

Were known; and when they saw an offspring born
From out themselves, then first the human race
Began to soften.

Recall. Filarete draws the same picture.